REMARKS

Rejections under 35 U.S.C. § 112

Claims 12, 13, and 16-25 stand rejected as indefinite insofar as it is alleged one of skill would not understand what is meant by "further additives." It is not understood how this rejection applies at all to claims 12, 13, 16-20, and 22-25, which do not recite "further additives." A claim cannot be indefinite in a term that does not appear in the claim. "Further additives" did appear in claim 21, but is now omitted, and therefore this rejection should not be applied to any claim pending.

The Examiner also notes "claim 1 comprises limitation of 'superparamagnetic' without explanation as to what applicant's really mean by that. The specification also did not contain term 'superparamagnetic' or at least the examiner was not able to find it." "Superparamagnetic" appears at page 3, line 29, and applicants intend it to mean what it ordinarily means to one of skill in the art. The Examiner has expressed difficulty in understanding the definition. Accordingly, applicants will again discuss different types of magnetism, as understood in the art and as applied in this application.

Principles Of Magnetism

When a material is placed within a magnetic field, the magnetic forces of the material's electrons will be affected. However, materials can react quite differently to the presence of an external magnetic field. This reaction is dependent on a number of factors such as the

atomic and molecular structure of the material, and the net magnetic field associated with the atoms. **Most materials can be classified as ferromagnetic, ferrimagnetic, diamagnetic or paramagnetic. (See e.g.,** Magnetic Properties, Klein and Hurlbut (21st Ed) p.179, 270-274; and **Classification of Magnetic Materials by the University of Birmingham available at:**

www.aacg.bham.ac.uk/magnetic materials/type.htm)

Paramagnetic materials have a small and positive susceptibility to magnetic fields. These materials are slightly attracted by a magnetic field and the material **does not** retain the magnetic properties when the external field is removed. Paramagnetic properties are due to the presence of some unpaired electrons and from the realignment of the electron orbits caused by the external magnetic field. Paramagnetic materials include magnesium, molybdenum, lithium, and tantalum. Other examples include olivine $(Fe,Mg)_2SiO_4$, an iron, magnesium silicate), siderite($FeCO_3$, iron carbonate), and biotite $(K(Fe,Mg)_3AlSi_3O_{10}(F,OH)_2$, a potassium iron magnesium aluminum silicate hydroxide fluoride).(See, Magnetic Properties, Klein and Hurlbut (21st Ed) p.179,270-274)

Ferromagnetic materials have a large and positive susceptibility to an external magnetic field. They exhibit a strong attraction to magnetic fields and are **able to retain their magnetic properties after the external field has been removed.** Ferromagnetic materials have some unpaired electrons so their atoms have a net magnetic moment. Iron, nickel, and cobalt are examples of

ferromagnetic materials. Other examples include Barium ferrite ($BaO.6Fe_2O_3$).

Ferrimagnetic materials also possess their own magnetic field. Examples include magnetite and pyrrhotite. (See, Magnetic Properties, Klein and Hurlbut (21st Ed) p.179, 270-274).

It will be appreciated from the above discussion that some elements, such as iron, may exist in paramagnetic, ferromagnetic, and ferrimagnetic forms, depending on the chemical composition.

Rejections under 35 U.S.C. §§ 102, 103

In the Office Action of March 1, 2004, claims 12, 13, 16, and 20-24 were rejected under 35 USC 102(e) as being anticipated by Komagata (US Patent No. 5,714,238). Claims 12-13 and 16-21 were rejected under 35 USC 102(e) as being anticipated by Czaplicki (US Patent No. 5,985,435). All of these claims recite paramagnetic or superparamagnetic nanoparticles.

Komagata discloses an adhesive composition comprising resins and conductive particles. The conductive particles include nickel or a nickel-boron alloy. There is no suggestion in Komagata of employing a paramagnetic or superparamagnetic material in the adhesive composition.

The Examiner suggests that Komagata satisfies the limitation of claim 14. However, claim 14 was canceled by a prior amendment. Nickel, as noted above, is a

ferromagnetic material. Paramagnetic or superparamagnetic nanoparticles, however, as presently claimed, are not disclosed by Komagata.

As will be appreciated, the specification lists a variety of nanoparticles having magnetic properties, particularly ferromagnetic properties (col. 4, line 15, et seq.). Indeed, the claims as originally filed recited ferromagnetic materials. However, the present claims recite a paramagnetic or superparamagnetic material only. That applicants' specification describes ferromagnetic materials does not mean that those materials are now claimed. Indeed, one of skill would readily appreciate that a ferromagnetic material is not an element of the claims now at issue. The fact that the prior art discloses ferromagnetic materials and that applicants' specification describes ferromagnetic materials does not mean that applicants are claiming those materials. To reach such a conclusion requires distorting the accepted meanings of ferromagnetic, paramagnetic, and superparamagnetic, for which there is no basis in the record.

Having a magnetic material that is paramagnetic has certain advantages in that in normal use in an adhesive paper product, the adhesive will not show any significant magnetic property due to the presence of the paramagnetic material. The adhesive can be removed from waste paper, however, by applying a magnetic field to the comminuted pulp.

Czaplicki discloses an adhesive comprising ferrites, such as barium ferrite and strontium ferrite. Iron oxides

may also be used. As noted above, barium ferrite (and, it is presumed, strontium ferrite) is a ferromagnetic materials. Magnetite, as noted above, is ferrimagnetic, not paramagnetic or superparamagnetic.

As will be appreciated, Czaplicki's magnetic particles serve to retain an assembly 20 in position on a ferrous metal substrate (col. 4, lines 36-37. Paramagnetic particles would not serve such a purpose, as once the magnetizing field was removed, substantially all magnetic properties would be lost. Thus, Czaplicki teaches against the use of paramagnetic materials.

The remaining references do not supply the deficiencies of the primary references. Thakur, et al., US Patent No. 5,240,626, which was cited against claims 12, 21,and 22, discloses an aqueous ferrofluid that includes colloidally dispersed magnetite particles. As noted above, magnetite is properly classed as a ferrimagnetic material, although it should be noted that some sources do not recognize the distinction between ferromagnetic and ferromagnetic materials and consider magnetite be ferromagnetic. It is clearly not paramagnetic. Ferric nitrate and ferric sulfate are also disclosed. It would not be obvious to incorporate these substances into the composition of Czaplicki as the paramagnetic properties they possess would destroy the object of Czaplicki, which is to retain an assembly in position on a ferrous metal substrate.

Similarly, US Patent No. 4,176,054 to Kelly, which was cited against claims 13 and 23-25, discloses use of

magnetite in an adhesive composition. As discussed above, magnetite is a ferrimagnetic material. Although Kelly also discloses the use of paramagnetic materials, there is no motivation for replacing Czaplicki's magnetic particles with Kelly's paramagnetic particles since these would destroy the object of Czaplicki, which is to retain an assembly in position on a ferrous metal substrate.

Sawai, US Patent No. 4,254,201, cited against claims 16 and 18-22, suggests iron Fe_3O_4 (magnetite), nickel, or cobalt particles for forming a magnetic pressure sensitive toner. As noted above, iron, nickel, and cobalt are examples of ferromagnetic materials, while Fe_3O_4 is ferrimagnetic.

Response to Examiner's Answers

The Examiner has answered Applicants' arguments that the cited references do not disclose paramagnetic or superparamagnetic substances as claimed by pointing out that Applicants' specification describes substances such as ferrites and magnetite. It is alleged that this is somehow inconsistent with Applicants' position that these same substances when described in the prior art are not paramagnetic or superparamagnetic. But Applicants have never contended that ferrites or magnetite are paramagnetic or superparamagnetic. Applicants have, in both their application and arguments, consistently urged that ferrites and magnetite are ferromagnetic or ferrimagnetic. Their ability to retain magnetism in the absence of an applied external field critically distinguishes these materials from the claimed substances. As pointed out above, that

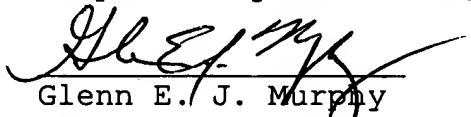
Applicants' description recites these materials is a mere artifact of the earlier broader scope of their claims and should not be used as a pretext by the Examiner to distort the accepted meaning of the terms of magnetism.

Thus the ferrites of Czaplicki alone would not teach or suggest Applicants' claim element of paramagnetic or superparamagnetic particles, nor would the magnetite of Thakur or Kelley. That Kelly generically describes paramagnetic particles does not transform the magnetite it also describes into a paramagnetic substance; it is and remains ferrimagnetic. Accordingly, it is submitted that all claims distinguish patentably over the references of record.

CONCLUSION

Applicants respectfully request the entry of this Amendment and reconsideration of the claims. Applicants further ask for extension of the period for response to be extended by one month to July 1, 2004, and authorize a charge to Deposit Account No. 01-1250 in the amount of $110.00 for the extension fee. Order No. 04-0233. Should any fees be due for entry and consideration of this Amendment that have not been accounted for, the Commissioner is authorized to charge them to Deposit Account No. 01-1250.

Respectfully submitted,



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